

CLAIMS:

1 1. A method of providing secure communications between a first wireless
2 unit and a second wireless unit, said method comprising the step of:
3 providing a common key value to a first wireless unit and for use in secure
4 communications over at least one wireless communications system between said first
5 wireless unit and said second wireless unit having said common key.

1 2. The method of claim 1 wherein said step of providing comprising the
2 steps of:
3 generating a first key value corresponding to said first wireless unit;
4 generating a common key value; and
5 sending said common key value to said first wireless unit using said first key
6 value.

1 3. The method of claim 2 comprising the steps of:
2 generating a second key value corresponding to said second wireless unit; and
3 sending said common key value to said second wireless unit using said second
4 key value.

1 4. The method of claim 2 wherein said step of generating comprises the
2 step of:
3 generating said first key value as a function of a first root key known only at
4 said first wireless unit and a home wireless communications system for said first
5 wireless unit.

1 5. The method of claim 3 wherein said step of generating comprises the
2 step of:

3 generating said second key value as a function of a second root key known
4 only at said second wireless unit and at a home wireless communications system for
5 said second wireless unit.

1 6. The method of claim 2 wherein said step of providing comprises the
2 steps of:
3 encrypting said common key using said first key value; and
4 transmitting said common key encrypted with said first key value to said first
5 wireless unit.

1 7. The method of claim 3 wherein said step of providing comprises the
2 steps of:
3 encrypting said common key with said second key value; and
4 transmitting said common key encrypted with said second key value to said
5 second wireless unit.

1 8. The method of claim 2 wherein said step of generating said common
2 key value comprises the steps of:
3 generating said common key as a function of at least one of said first key value
4 and said second key value.

1 9. The method of claim 1 comprising the step of:
2 generating said common key as an encryption key.

1 10. The method of claim 1 comprising the step of:
2 generating said common key as a session key.

1 11. The method of claim 1 comprising the step of:

2 generating a first session key value as a function of a first root key known only
3 at said first wireless unit and a home wireless communications system for said first
4 wireless unit; and
5 generating said common key as a session encryption key being a function of at
6 least said first session key value.

1 12. The method of claim 1 comprising the steps of:
2 mutually producing said common key by a first wireless communications
3 system for said first wireless communications system and a second wireless
4 communications system for said second wireless unit.

1 13. A method of providing secure communications between a first wireless
2 unit and a second wireless unit, said method comprising the step of:
3 receiving by a first wireless unit from at least one wireless communications
4 system a common key value for use in secure communications over at least one
5 wireless communications system between said first wireless unit and said second
6 wireless unit having said common key.

1 14. The method of claim 13 comprising the steps of:
2 generating a first key value corresponding to said first wireless unit; and
3 obtaining said common key value by said first wireless unit using said first
4 key value.

1 15. The method of claim 14 comprising the steps of:
2 generating a second key value corresponding to said second wireless unit; and
3 obtaining said common key value by said second wireless unit using said
4 second key value.

1 16. The method of claim 14 wherein said step of generating comprises the
2 step of:
3 generating said first key value as a function of a first root key known only at
4 said first wireless unit and a home wireless communications system for said first
5 wireless unit.

1 17. The method of claim 14 wherein said step of providing comprises the
2 steps of:
3 decrypting said common key using said first key value.

1 18. The method of claim 13 comprising the step of:
2 receiving said common key as an encryption key.

1 19. The method of claim 13 comprising the step of:
2 receiving said common key as a session key.

1 20. The method of claim 13 comprising the steps of:
2 generating a first session key value as a function of a first root key known only
3 at said first wireless unit and a home wireless communications system for said first
4 wireless unit; and
5 receiving said common key as a session encryption key being a function of at
6 least said first session key value.